Plant Science, 51 (1987) 325–327
Elsevier Scientific Publishers Ireland Ltd.

VOLUME CONTENTS

Volume 51 (1987)

PHYSIOLOGY AND BIOCHEMISTRY

Localization of manganese superoxide dismutase in peroxisomes isolated from *Pisum sativum* L.
by L.M. Sandalio, J.M. Palma and L.A. Del Rio (Granada, Spain) 1–8

Purification and some properties of the secreted arginase of the lichen *Evernia prunastri* and its regulation by usnic acid
by V. Planelles and M. Estrella Legaz (Madrid, Spain) 9–16

Compartmentation studies on enzymes of ornithine biosynthesis in plant cells
by J.C. Jain, P.D. Shargool and S. Chung (Saskatchewan, Canada) 17–20

Interconversion and translocation for free sugars during galactomannan utilization in germinating guar (*Cyamopsis tetragonoloba*) seed
by R. Singh, P. Kuar, J. Goyal and A.K. Gupta (Ludhiana, India) 21–28

Effect of a substituted pyridazinone on the decrease of lipoxygenase activity in soybean cotyledons
by X.M. Wang and D.F. Hildebrand (Lexington, KY) 29–36

Effect of gibberellin on protein and non-structural carbohydrate in dormant *Avena fatua* caryopses
by J. Keng and M.E. Foley (Bozeman, MT) 37–41

Inhibition of ethylene effects in iris bulbs by 2,5-norbornadiene
by N. Marissen, L.H.W. van der Plas, P. van der Maas and W.A. Kanneworff (Amsterdam, The Netherlands) 43–49

GENETICS AND MOLECULAR BIOLOGY

Stored and de novo synthesised polyadenylated RNA and loss of vigour and viability in wheat seed
by P.J. Rushton and C.M. Bray (Manchester, U.K.) 51–59

Evidence for translational regulation of chloroplast and mitochondrial biogenesis in *Euglena*
by A.F. Monroy, S.A. McCarthy and S.D. Schwartzbach (Lincoln, NE) 61–76

CELL AND TISSUE STUDIES IN VITRO

Immature embryo and anther culture of chromosome addition lines of rye in Chinese Spring wheat
by M.D. Lazar, R.H.H. Chen, G.J. Scoles and K.K. Kartha (Edmonton and Saskatchewan, Canada) 77–81

Conditioning factor affecting growth in plant cells in culture
by D. Bellincampi and G. Morpurgo (Rome, Italy) 83–91

Plant regeneration via somatic embryogenesis in mature embryo-derived callus culture of *Sinocalamus latiflora* (Munro) McClure
by M.-L. Yeh and W.-C. Chang (Taiwan, Republic of China) 93–96

Lipid metabolism in oil palm (*Elaeis guineensis* and *Elaeis oleifera*) protoplasts
by R. Sambanthamurthi, K.-C. Oo and A.S.H. Ong (Kuala Lumpur, Malaysia) 97–103

Electrofusion of biochemically well characterized nitrate reductase deficient *Nicotiana plumbaginifolia* mutants. Studies on optimization and complementation
by S.E. de Vries, E. Jacobsen, M.G.K. Jones, A.E.H.M. Loonen, M.J. Tempelaar, J. Wijbrandi and W.J. Feenstra (Haren, The Netherlands and Harpenden, U.K.) 105–112

GENERAL

Isolation of antibiotic resistant variants in a higher plant, *Nicotiana sylvestris*
by J. Durand (Orsay, France) 113–118

The combined influence of sulphur dioxide and copper on two populations of *Trifolium repens* and *Lolium perenne*
by T.A. Dueck and B.J. Duijff (Amsterdam, The Netherlands) 119–127

PHYSIOLOGY AND BIOCHEMISTRY

A possible regulation of carbamoylphosphate synthetase and aspartate carbamoyltransferase in chloroplasts
by H. Shibata, Y. Sawa, H. Ochiai, T. Kawashima and K. Yamane (Shimane, Japan) . . . . . 129—133

Relation of polyamine titer to photoperiodic induction of flowering in *Pharbitis nil*
by Y.-R. Dai and J. Wang (Beijing, China) . . . . . 135—139

In vivo and in vitro inactivation of spinach leaf nitrate reductase by cyanide photogenerated from carbonylcyanide *m*-chlorophenylhydrazone
by S. García-Mauriño and J.M. Maldonado (Córdoba, Spain) . . . . . 141—146

Elicitation of phenylalanine ammonia-lyase in *Daucus carota* by oligogalacturonides released from sodium polypectate by homogeneous polygalacturonase
by G. De Lorenzo, A. Ranucci, D. Bellincampi, G. Salvi and F. Cervone (Rome, Italy) . . . . . 147—150

Characterisation of pyrophosphate dependent phosphofructokinase from germinating bean seeds
by F.C. Botha, J.G.C. Small and A. Burger (Bloemfontein, South Africa) . . . . . 151—157

Enzymes of the pentose phosphate pathway in callus-forming potato tuber discs grown at various temperatures
by A.M. Wagner, T.J.A. Kneppers, B.M. Kroon and L.H.W. van der Plas (Amsterdam, The Netherlands) . . . . . 159—164

Dichroic orientation of photoreceptors for chloroplast movement in *Adiantum* protonemata. Non-helical orientation
by H. Yatsuhashi, T. Hashimoto and M. Wada (Miyazaki, Saitama and Tokyo, Japan) . . . . . 165—170

Changes in glutathione content of maize seedlings exposed to cadmium
by W.E. Rauser (Guelph, Canada) . . . . . 171—175

Methyljasmonate-induced changes in the polypeptide pattern of senescing barley leaf segments
by R.A. Weidhase, H.-M. Kramell, J. Lehmann, H.-W. Liebisch, W. Lerbs and B. Parthier (Halle, G.D.R.) . . . . . 177—186

Diagravitropism in bermudagrass (*Cynodon dactylon* (L.) Pers.) as determined by a gravitropic and a geoepinastic phenomenon
by J.G. Wilemoës, J. Beltrano and E.R. Montaldi (La Plata, Argentina) . . . . . 187—191

Light-stimulated transplasmalemma electron transport in oat mesophyll cells
by S. Dharmawardhane, A.I. Stern and B. Rubinstein (Amherst, MA) . . . . . 193—201

An analysis of gamete and organelle movement in the pollen tube of *Secale cereale* L.
by J. Heslop-Harrison and Y. Heslop-Harrison (Aberystwyth, U.K.) . . . . . 203—213

GENETICS AND MOLECULAR BIOLOGY

Analysis by flow cytometry of the primary events of *Petunia hybrida* protoplast transformation
by D. Tagu, C. Bergounioux, C. Perennes, S. Brown, P. Muller and P. Gadal (Orsay and Gif-sur-Yvette, France) . . . . . 215—223

cDNA cloning of mitochondrial transcripts from *Oenothera*
by R. Hiesel and A. Brennicke (Tübingen, F.R.G.) . . . . . 225—230

CELL AND TISSUE STUDIES IN VITRO

Two regeneration systems for the production of haploid plants from wheat anther culture
by T.A. Armstrong, S.G. Metz and P.N. Mascia (Chesterfield, MO) . . . . . 231—223

High regeneration potential of root segments of *Lotus corniculatus* L. seedlings on hormone free media
by J.J. Rybczynski and T. Badzian (Prawdziwka, Poland) . . . . . 239—244

Plant regeneration of two *Lupinus* spp. from callus cultures via organogenesis
by G.E. Sroga (Poznań, Poland) . . . . . 245—249

Effect of some auxins and antiauxins on protonemal growth and bud formation in *Bryum pallescens* Schleich. ex Schwaegr. grown in vitro
by Sarla and R.N. Chopra (Delhi, India) . . . . . 251—256

Callus growth, cell increase and alcohol metabolism compared between two muskmelon varieties in culture
by C.-S. Liu and C.-Y. Chen (Taiwan, Republic of China) . . . . . 257—261

Tissue culture propagation of tree legume *Albizia lebbek* (L.) Benth
by P.V.L. Rad and D.N. De (Kharagpur, India) . . . . . 263—267
Lack of effect of the photosystem II-based herbicides diuron and atrazine on growth of photoheterotrophic *Chenopodium rubrum* cells at concentrations inhibiting photoautotrophic growth of these cells
by A.R. Ashton and P. Ziegler (Bayreuth, F.R.G.) . . . . . 269—276
Protoplast fusion of monohaploid ($2n = x = 12$) potato clones: identification of somatic hybrids using malate dehydrogenase as a biochemical marker
by B.A. Uijtewaal, L.C.J.M. Suurs and E. Jacobsen (Wageningen and Haren, The Netherlands) . . . 277—284

GENERAL

Early infection events in the nodulation of the non-legume *Parasponia andersonii* by *Bradyrhizobium*
by G.L. Bender, M. Nayudu, W. Goydych and B.G. Rolfe (Canberra and Belconnen, Australia) . . . 285—293
Synthesis of potyviral RNA and proteins in tobacco mesophyll protoplasts inoculated by electroporation
by C.S. Luciano, R.E. Rhoads and J.G. Shaw (Lexington, KY) . . . . . 295—303
Evidence of concurrent spread of tobacco mosaic virus from infected epidermal cells to neighboring epidermal and mesophyll cells
by F.F. Fannin and J.G. Shaw (Lexington, KY) . . . . . 305—310
Protection of wheat against leaf and stem rust and powdery mildew diseases by inhibition of polyamine metabolism
by L.H. Weinstein, J.F. Osmeloski, S.H. Wettlaufer and A.W. Galston (Ithaca, NY and New Haven, CT) . . . . . 311—316
Subject Index Volume 51 . . . . . 317—321
Author Index Volume 51 . . . . . 323—324
Contents Volume 51 . . . . . 325—327

CONTENTS (*continued from* back cover)

High regeneration potential of root segments of *Lotus corniculatus* L. seedlings on hormone free media
by J.J. Rybczynski and T. Badzian (Prawdziwka, Poland) . . . . . 239—244
Plant regeneration of two *Lupinus* spp. from callus cultures via organogenesis
by G.E. Sroga (Poznań, Poland) . . . . . 245—249
Effect of some auxins and antiauxins on protonemal growth and bud formation in *Bryum pallescens* Schleich. ex Schwaegr. grown in vitro
by Sarla and R.N. Chopra (Delhi, India) . . . . . 251—256
Callus growth, cell increase and alcohol metabolism compared between two muskmelon varieties in culture
by C.-S. Liu and C.-Y. Chen (Taiwan, Republic of China) . . . . . 257—261
Tissue culture propagation of tree legume *Albizia lebbek* (L.) Benth
by P.V.L. Rad and D.N. De (Kharagpur, India) . . . . . 263—267
Lack of effect of the photosystem II-based herbicides diuron and atrazine on growth of photoheterotrophic *Chenopodium rubrum* cells at concentrations inhibiting photoautotrophic growth of these cells
by A.R. Ashton and P. Ziegler (Bayreuth, F.R.G.) . . . . . 269—276
Protoplast fusion of monohaploid ($2n = x = 12$) potato clones: identification of somatic hybrids using malate dehydrogenase as a biochemical marker
by B.A. Uijtewaal, L.C.J.M. Suurs and E. Jacobsen (Wageningen and Haren, The Netherlands) . . . 277—284

GENERAL

Early infection events in the nodulation of the non-legume *Parasponia andersonii* by *Bradyrhizobium*
by G.L. Bender, M. Nayudu, W. Goydych and B.G. Rolfe (Canberra and Belconnen, Australia) . . . 285—293
Synthesis of potyviral RNA and proteins in tobacco mesophyll protoplasts inoculated by electroporation
by C.S. Luciano, R.E. Rhoads and J.G. Shaw (Lexington, KY) . . . . . 295—303
Evidence of concurrent spread of tobacco mosaic virus from infected epidermal cells to neighboring epidermal and mesophyll cells
by F.F. Fannin and J.G. Shaw (Lexington, KY) . . . . . 305—310
Protection of wheat against leaf and stem rust and powdery mildew diseases by inhibition of polyamine metabolism
by L.H. Weinstein, J.F. Osmeloski, S.H. Wettlaufer and A.W. Galston (Ithaca, NY and New Haven, CT) . . . . . 311—316
Subject Index Volume 51 . . . . . 317—321
Author Index Volume 51 . . . . . 323—324
Contents Volume 51 . . . . . 325—327